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# Music and Athletics: An Inseparable Bond

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Symington, Alisha, "Music and Athletics: An Inseparable Bond" (2016). *The Research and Scholarship Symposium*. 17.  
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# Athletics and Music: A Historic Marriage of two Separate Worlds

Alisha Symington

Abstract: Music is so deeply ingrained in nearly every part of our culture, it sometimes passes by unnoticed. However, if one were to remove music from its typical appearance, the resulting silence can be deafening. For example, in a film, such as Star Wars, if the main theme did not exist, the anticipation of the film and the overall reaction to the plot would be far less appealing. If clothing stores did not play spunky electronic music, would consumer's shopping habits be altered? A strongly universal and historic aspect of culture that a lack of music would dramatically is the world of athletics. How is it that music and athletics became so passionately entangled throughout history? Emotions and psychological responses to music and athletics have always affected society, but only fairly recently have psychologists published extensive research on the topic. Because of these modern studies on music and sports psychology, we can better understand the correlation between these two aspects of culture throughout history. Ancient Greece holds many secrets in the development of both the written music and organized athletics as we know them today. The emphasis on emotion is what drove the society. The Oxford Dictionary of Music Psychology gives important information in regards to both physiological and psychological responses to music. The result of this study is not only fascinating, but could be very important in the lives of athletes and their coaches. This information will assist athletes in choosing warm-up and program music that will guide their bodies physically and mentally to athletic perfection.

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John Williams is a musical name that can evoke some sort of emotional response from most Americans. Being one of the greatest film score composers of all time, it is his responsibility to pull an emotional, sometimes even a physical response from his audience.<sup>1</sup> His theme for Anakin Skywalker in Star Wars manages to reflect the youth of a young boy, but haunt the audience with an unknown outcome of his character.<sup>2</sup> His violin solo in “Schindler’s List” leaves the listener broken with tragedy, but unable to pull away from the beauty of the melody.<sup>3</sup> Another piece by this beloved legend is the Olympic Fanfare. This piece tends to draw a completely different emotional response than the two previously mentioned pieces. The opening cymbal crashes and the booming of the timpani alternating between the tonic and the dominant creating a dramatic perfect fourth is a beginning that will grab attention. Then the brass fanfare jumps into the sound with the top voice beginning on the third of the scale will for sure ensnare the focus of the listener if the opening percussion failed to do so. As the opening strikes the listener with awe, the piece moves forward to a beautiful theme with an undercurrent of moving parts as if to support the melody and drive it forward. This has an inspirational effect on the outcome. This theme has a very dramatic effect on those who watch the Olympics. Imagine watching the Olympics with no fanfare, or even without music during the opening ceremonies. In fact, thinking of taking part of any athletic event without music playing a large role, seems “lack luster” or almost awkward in a sense. When seeing all of the connections between the seemingly different worlds of sports and music, it is

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<sup>1</sup> Hayes, Stephanie. "Celebrate the Music Man of the Movies; Can You Pick the Best Pieces by John Williams, the Composer of Some of the Biggest Movies Ever Made?" *Tampa Bay Times* (2015)

<sup>2</sup> Orchestra, London Symphony. *Anakin's Theme*. Com. John Williams. (1999)

<sup>3</sup> Williams, Prahy, Filharmonici mesta. *Schindler's List*. Comp. John Williams. (1993)

natural to wonder if these two realms of human creativity have always overlapped throughout history and if so, to what degree. What is it inside the human mind that allows music to enhance the athletic experience so dramatically? The secrets to this mystery find their origins in ancient philosophy. Because of the ancient philosophies of morals and music, we can better understand the results of modern music and sports psychology in turn benefiting athletic performance.

To begin this study, it is important to understand the physiological and emotional strains athletic competition places on the participant. These strains place a certain dependency on the powers of music. The goal of this portion is to show the dependency athletics holds for music and to prove that this dependency does, in fact, exist. The demands placed on the human body and mind through athletics creates a need for relief. Music is able to answer these demands with undeniable results.

Every sport seems to overlap in the specific types of physiological stresses such as heart rate and pulse, but the different events call for different levels of demand. Marina M. Rodriguez F.A. wrote a study in the “Biology of Sport” concerning the physiological demands placed on young women in competitive artistic gymnastics. Typically, when one considers the difficulty of artistic gymnastics, the immediate thought is of the enormous need of strength, flexibility, and agility. However, this study revealed that young female gymnasts have been measured with a peak heart rate of 160-190 beats per minute after performing a routine. A healthy person should have a resting heart rate of 60-100 beats per minute, but athletes can have healthy resting heart rates as low as 40. This shows that a gymnastics routine will elevate the athlete’s heart rate adding over 100 beats per minute. The requirement for sufficient recovery used in this study was to return

the girls' heart rate to under 100 beats per minute.<sup>4</sup> Music could have been used as an effective method of heart rate recovery. A large amount of evidence has proven that listening to music affects heart rate. In general, upbeat or intense music elevates the listener's pulse while serene and calming music will cause the pulse to decrease.<sup>5</sup>

The emotional stress placed upon competitive athletes is overwhelming. Although it varies in different cases depending on many variables including setting, coach, sport, and the athlete themselves, there always seems to be an underlying anxiety of some sort. Three researchers from three different universities joined forces to create a study regarding the connection between emotional intelligence and athletic performance of college baseball players. Psychologist Howard Gardner created an intelligence theory based upon several different intelligence categories including kinesthetic, musical, interpersonal, and more.<sup>6</sup> This particular study is based off of research in the category of emotional intelligence. Emotional intelligence is considered to include several skills such as communication, motivation, and persistence. The researchers found that the ability to control positive thinking, relaxation, and concentration were not only evidence of emotional intelligence but also improved the performance of the baseball players. The average emotional intelligence scores of the athletes were higher than the normal average. Unfortunately, the outcome of this study was inconclusive. However, the elevated emotional intelligence level in these athletes in general is in itself proof of the

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<sup>4</sup> Rodriguez, Marina M. F.A. "Physiological Demands of Young Women's Competitive Gymnastic Routines." *Biology of Sport Vol. 31, No. 3* (2014) : 217-222

<sup>5</sup> Hallam, Susan and Cross, Ian and Thaut, Michael. *Oxford Handbook of Music Psychology*. Oxford; New York: Oxford University Press, 2009 : 121-124

<sup>6</sup> Ekinci, Birsan. "The Relationships Among Sternberg's Triarchic Abilities, Gardner's Multiple Intelligences, and Academic Achievement," *Social Behavior and Personality* (2014) 624-634

emotional stability required in sports.<sup>7</sup> The participation in sports itself seems to elevate emotional intelligence, but the addition of music to the athlete's lifestyle could cause the person to grow emotionally at a faster pace resulting in a faster and healthier competitive improvement. According to the Oxford Dictionary of Music Psychology, music can actually induce emotions.<sup>8</sup> If a person cannot recognize the emotions that are affecting them, they will not be able to take care of them properly. Music can help bring to the surface the emotions being felt by the athletes in order for them to channel them in an effective manner.

These modern studies on sports and music psychology are more precise and thorough experiment than those that have been done in the past. However, the concept of music and athletics as an amazing duo was born many thousands of years before the word "psychology" even existed. Ancient Greece is the perfect geographical starting point for diving into historical researching the ancient connection between athletics and music. This fascinating culture was monumental in the early stages of both of these impactful aspects of culture. The Olympics and early musical notation both find their origins in world of Ancient Greece.

The precise moment when the practice of athletic competition began is not known, but it is commonly said that the Olympics began in 776 B.C. ( This date has been an element of conflict between scholars due to differing opinions on what defined the term "Olympics" during ancient times. Athletic practices began at an earlier date, and

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<sup>7</sup> Zizzi, Samuel J. and Deaner, Heather and Hirschhorn, Douglas K. "Emotional Intelligence and Baseball Performance," *Journal of Applied Psychology* Vol. 15 No. 3 (2003) 263-269

<sup>8</sup> Hallam, Susan and Cross, Ian and Thaut, Michael. *Oxford Handbook of Music Psychology*. Oxford; New York: Oxford University Press, 2009 131-132

some scholars argue that the Olympics existed earlier as well.) Scholars have attempted to trace the Olympics in influences of other cultures such as Egypt and Mesopotamia. Although the artwork of these cultures shows some evidence of sporting events, ancient Greek athletics were clearly unique. Greece, unlike the other athletic cultures, was competition driven. The word “athletics” is derived from the Greek word “athlon” meaning “prize,” and these prizes could have been anything from the physical to the symbolic. The word “athlete” means, “one who competes for a prize.” It should be noted that there were no team competitions in these Olympics nor was there any recognition for those who came in second place. Every competition consisted of individual athletes and resulted in one winner and many losers. This competitive spirit that gave birth to athletics was a result of the Dorian invasion. During the Geometric period, the Dorian’s warlike and competitive spirits pushed the culture into the development of these games.<sup>9</sup>

Ancient Greece was also monumental in the development of music. The first preserved document of notated Greek music dates back to the middle of 300 B.C. This in itself is evidence of the strong Grecian influence on musical development due to the early historic date of these writings. The notation system consisted of functional letters and symbols implying a particular purpose within a musical scale or tonal center known as a mode.<sup>10</sup>

Stephan Hegal in his *Ancient Greek Music: A New Technical History* defines these modes, “The model scale is an abstract set of notes defined within a skeleton of

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<sup>9</sup> Miller, Stephen G. *Ancient Greek Athletics*. New Haven: Yale University Press, 2004 : 11-22

<sup>10</sup> Hagel, Stefan. *Ancient Greek Music: a new technical history*. Cambridge; New York: Cambridge University Press, 2010 : 1-3

fixed intervals, against which the note material of any actual musical piece can be matched.”<sup>11</sup>

The musical modes were in the culture of that time inseparable from the beliefs about morality. Greek philosophers sorted through the modes dividing them into the categories of beneficial or harmful according to how the music affected them psychologically.<sup>12</sup>

It is within the modes where the discovery of connection between ancient Greek athletics and music can be found. These modes were given names after different tribal names: Ionian, Phrygian, Lydian, and *Dorian*.<sup>13</sup> Dorian, as mentioned earlier, was the name of the peoples who invaded Greece leading into the Early Iron Age. (There have been debates as to if this invasion actually took place, but the archaeological evidence showing an obvious shift in culture typically put these arguments to rest. The Dorian influence brought about a strong competitive spirit. This can be seen in the artwork discovered from this period forward. Following the Dorian invasion, a steady stream of athletic depictions has been found.) The connection between Dorian mode and Dorian athletic competition lies in the theories of the Ethos. (Ethos is the moral element that drives a person’s actions as the philosophers believed.) Not only were athletics and music an important part of Grecian history, but the Greeks also placed a high respect for emotional and psychological studies. Philosophers such as Aristotle and Plato spent many hours contemplating and writing about the morals of man. Plato believed that the musical

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<sup>11</sup> Hagel, Stefan. *Ancient Greek Music: a new technical history*. Cambridge; New York: Cambridge University Press, 2010 : 2-3

<sup>12</sup> Monroe, D.B M.A. *The Modes of Ancient Greek Music*. London: Oxford University Press Warehouse, 1894 :2

<sup>13</sup> Monroe, D.B M.A. *The Modes of Ancient Greek Music*. London: Oxford University Press Warehouse, 1894



modes did not merely function as reflection of human emotion, but moral temper made an actual manifestation within these musical forms. Some of the modes, especially Mixolydian, cause the listener to move into a depressed or melancholy state of being. Phrygian causes excitement. Dorian, however, is the only mode that causes a peaceful or settled mood. The philosophers were in agreement that Dorian mode was the most steadfast and courageous of the modes. Aristotle even presented that Dorian was the mode then held the highest excellence. Excellence and courage were the core of Greek athletics as was established by the Dorians.<sup>14</sup> The Dorian festival known as “Karneia” was the primary festival held in Sparta and the rest of the Dorian states. This was a nine-day music and choral festival to be held during the time of harvest. It was a huge draw to poets and musicians from all around Greece. This festival also was a representation of military life in Sparta. There were athletic competitions such as running races held for young boys.<sup>15</sup> This festival is a great example of the early foundations of music and athletics. The psychology of music and athletics were inseparable through the philosophies of this ancient culture.

The ancient studies on music and morals seem very mystical and abstract, unlike today’s studies of the human mind. The philosophers of the ancient times have become the psychologists and scientists that we have today. Instead of placing theories on feelings or complicated patterns of thought, our culture today demands logic and hard evidence. Both music and athletics would benefit greatly if we did not abandon one

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<sup>14</sup> Monroe, D.B M.A. *The Modes of Ancient Greek Music*. London: Oxford University Press Warehouse, 1894

<sup>15</sup> Howatson, M. C. Editor. *The Oxford Companion to Classical Literature (3 ed.)* Oxford University Press, 2011

method of discovery for the other. Music, although often seen as a more emotional outlet of self-expression, holds many logical scientific secrets that have baffled even the most brilliant of minds. Athletics is the more obviously scientific of the two worlds, but the emotions that are brought forth in the midst of a competition can cause a rise in the even coldest of hearts. Throughout history, philosophers and scientists have understood the benefits of music in athletic performance but from different viewpoints. In the future, if athletes and musicians could understand both the logical, scientific side and abstract, emotional side of their perspective crafts, the performance of athletes in competition would solidly improve.

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10 Alisha Symington  
Fall 2015

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